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Small Firms Create Proportionally More Jobs than Large Firms: Myth or Reality?

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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0s	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
p	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the *Statistics Act*
E	use with caution
F	too unreliable to be published
*	significantly different from reference category ($p < 0.05$)

Small Firms Create Proportionally More Jobs than Large Firms: Myth or Reality?

By Anne-Marie Rollin

This article in the *Economic Insights* series looks at the relationship between firm size and employment growth rates. It is based on the working paper *Firm Dynamics: Employment Growth Rates of Small Versus Large Firms in Canada*, which is the result of a joint research effort by Statistics Canada and Industry Canada.

Significant workforce expansions or reductions by firms invoke considerable interest in the sources of job turnover. The size of a firm is often thought to be related to its employment growth. Furthermore, there is a common belief that small firms create more jobs than large firms, at least relative to their share of employment in the economy. The evidence from a recent Canadian study suggests that this may be true, but in a limited way. Small firms create proportionally more jobs than large firms, but this pattern disappears once firm age, industry and time period are taken into account.

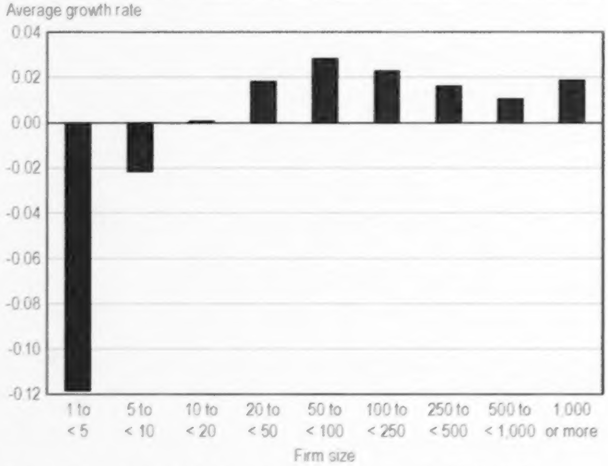
To investigate whether employment growth rates vary across firm sizes, annual data for the period 1999 to 2008 measuring employment of firms located in the business sector were used. Firm size was defined as the level of employment.

The conventional wisdom that employment in small firms grows faster than large firms can be confirmed. When firms are divided into three broad size classes (fewer than 100 employees, 100 to fewer than 500 employees, and 500 or more employees), the average annual rate of growth is higher in the smallest than in the medium-size and large-size classes (Table 1).

This regularity may be the result of different factors. Small firms may generally be found in industries that are growing more rapidly, or they may tend to share a particular characteristic, such as age, that is the real attribute identifying firms with more rapid growth profiles.

A regression model was used to assess whether factors other than size were behind the differences reported in Table 1. Annual employment growth in individual firms was regressed on the size of firms within a range of size classes that vary from the very small to the very large, in order to ask whether the growth rates were related to the size of the firm within each size class and how this relationship differed across size classes. This model controlled for three different effects: industry, year, and firm age. The practice of controlling for industry and year effects is common. Firm size distributions vary across industries. Patterns of employment growth are related to a firm's industry as well as to the overall performance of the economy over a given year.

Chart 1
Average employment growth rate by firm size, after the application of controls



Source: Statistics Canada, Longitudinal Employment Analysis Program, 1999 to 2008.

The regression also controlled for firm age since there is a well-known relationship between a firm's age and its annual rate of employment growth.[1] On average, younger firms grow at lower rates than older firms, in part because they also tend

1 See Evans (1987)

to go out of business in greater proportions. It is crucial to take into account firm age when exploring the relationship between employment growth and firm size, because small firms are disproportionally young and large firms are disproportionally older. For example, in 2008, 65% of firms with fewer than 10 employees were less than 10 years old whereas 85% of firms with 500 or more employees were 10 years old or older.

Small firms do not grow faster than large firms

The average growth rates for employment by size class derived from the multivariate analysis are plotted in Chart 1. Growth rates increase, not decrease, with firm size for firms with fewer than 20 employees. For firms with 20 or more employees, firm size is independent of job growth.

On average, firms above the size threshold of 20 employees expand their workforce proportionately more than firms below this size threshold. Among firms below this size threshold, the smallest ones grow more slowly than the largest ones, and the growth rates of these smallest firms are more negative than those of slightly larger firms. This is partially the result of higher exit rates among the youngest small firms. These findings do not support the view that small firms create proportionately more jobs than large firms—once industry, year, and age effects are taken into account.

These results are consistent with those obtained by U.S. researchers who studied the annual changes in employment of business-sector firms in the United States over the 14-year period from 1992 to 2005.[2]

Recent research, therefore, suggests that the drivers of employment growth are industry-specific factors, time-specific circumstances, and firm age. When these factors are considered, the size of a firm *per se* is not a contributing factor to employment growth, except in the case of the very smallest firms, which grow more slowly, not faster, than the larger firms.

Table 1
Average employment growth rate by major firm size classes, 1999 to 2008

Firm Size (employment)	Average employment growth rate
	growth rate
0 to less than 100	0.0461
100 to less than 500	0.0272*
500 or more	0.0209*

Notes: * indicates statistically different from smallest size class at the .05 level. For definitions of the employment measures, see Dixon and Rollin (2012).
Source: Statistics Canada, Longitudinal Employment Analysis Program, 1999 to 2008.

2. See Haltiwanger et al. (2010).

References

This article in the *Economic Insights* series is based on research on employment growth carried out by the Economic Analysis Division of Statistics Canada. It makes use of the Longitudinal Employment Analysis Program (LEAP) files maintained by the Division, which are generated from administrative payroll data filed by Canadian firms. For more information, please see the following:

Dixon, J., and A.-M. Rollin. 2012. *Firm Dynamics: Employment Growth Rates of Small Versus Large Firms in Canada.* Statistics Canada Catalogue no. 11-622-M. Ottawa, Ontario. The Canadian Economy in Transition. No. 025.

Evans, D.S. 1987. "The Relationship Between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries." *Journal of Industrial Economics.* Vol. 35. No. 4. p. 567–581.

Haltiwanger, J.C., R.S. Jarmin, and J. Miranda. 2010. *Who Creates Jobs? Small vs. Large vs. Young.* National Bureau of Economic Research. Cambridge, Massachusetts. NBER Working Papers. No. 16300.

Rollin, A.-M. 2012. *Firm Dynamics: Employment Dynamics Arising from Firm Growth and Contraction in Canada: 2000 to 2009.* Statistics Canada Catalogue no. 11-622-M. Ottawa, Ontario. The Canadian Economy in Transition. No. 024.